

### REMARKS

Claims 1-26, all the claims pending in the application, stand rejected under 35 U.S.C.

§101. Applicants respectfully traverse these rejections based on the following discussion.

#### **I. Claim Amendments**

In order to overcome the 35 U.S.C. §101 rejections, independent claims 1, 8, 14 and 20 are amended herein to include the following features:

- (1) “recording features of normal system operations in a history file”, support for this feature is found in paragraphs [0023-0024];
- (2) “storing said anomaly scores in a trained file”, support for this feature is found in paragraphs [0025-0026];
- (3) “establishing a threshold to evaluate whether events in live system operations are anomalies as compared to said normal system operations”, support for this feature is found in paragraphs [0026-27] and [0040];
- (4) “automatically identifying anomalous events in said live system operations based on said anomaly scores and on said threshold”, support for this feature is found in paragraph [0040]; and
- (5) “reporting said anomalous events”, support for this feature is found in paragraph [0063].

## II. 35 U.S.C. §101 Rejections

Claims 1-26 continue to stand rejected under 35 U.S.C. §101 on the basis of the claimed invention being directed to non-statutory subject matter. These rejections are traversed as explained below.

In the Office Action dated June 29, 2006, the Examiner asserted that "the step of 'automatically identifying abnormal actions' fails to render the claims statutory because it recites not a tangible result by not specifying what happened after the identifying method step" and "that the step of 'comparing said anomaly score for each of said features with said threshold to determine whether each anomaly score exceeds said threshold' fails to render the claims statutory because it recites not a tangible result by not specifying what happened after 'comparing' and 'determine'." In the Final Office Action dated October 18, 2006, the Examiner indicated that the "amended claims discussed abnormal actions but they are silent about normal actions." Therefore, the Examiner affirmed the 35 U.S.C. §101 rejection of claims 1-26. The Applicant's respectfully disagree.

It is generally understood that method inventions as a whole must produce a "useful, concrete and tangible result." (see *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02). It is also generally understood so that patents are not obtainable for simple ideas or concepts (see *Brenner v. Manson*, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); *In re Fisher*, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); *In re Ziegler*, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). The Applicant's submit that the claims, as amended, indeed recite a useful, concrete and tangible result.

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Specifically, the method of the present invention, as set out in amended independent claims 1, 8, 14 and 20 produces, not one, but several useful, concrete and tangible results. For example, the Examiner considers these independent claims non-statutory subject matter because they don't recite a tangible result by not specifying what happened after the identifying". Thus, a feature of "reporting said anomalous events" has been amended into the independent claims. Support for this feature is contained in paragraph [0063] of the specification which states that "when an abnormal state happens, the inter-feature model will capture their differences from normal state and report the problem to the user of the system." The reporting of anomalous events during live system operations is clearly a concrete and tangible result within the meaning of 35 U.S.C. §101. The result is also useful to managing system operations. As such the final result achieved by the steps set forth in the claims is "useful, tangible and concrete." Other useful, tangible and concrete results of the claimed method include, the model that is created as well as the trained file which is stored and contains calculated anomaly scores. .

More specifically, the results of the claimed method are "useful." According to the USPTO's Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility, published 26 October 2005 on page 20, to be "useful" a result must be specific, substantial and credible and as such is useful. The final result recites a specific and substantial utility, i.e., creating of a model, calculating of anomaly scores which are stored in a trained file and reporting of anomalous events. The results do not have "throw-away" utility, but rather they relate to the method of the claims and the field of endeavor such that they are specific. Moreover, the results are credible where one of skill in the art would view the claims and the disclosure that the method claimed would indeed result in the indications of anomalous events in

live system operations as set forth in the claims and throughout the disclosure. For example, the specification, on page 12, discloses that the invention provides an approach for "anomaly detection [i.e. indication of anomalous situations] that is applicable to a wide range of inductive learners such as decision trees."

The results are "tangible." According to the USPTO's Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility, published 26 October 2005 on page 21, the tangible requirement "does not mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing." To be tangible, the process must set forth a practical application. A practical application of the present invention is the identification and reporting of anomalous events, i.e. anomaly detection.

The result is "concrete." According to the USPTO's Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility, published 26 October 2005 on page 22, the question of whether the result is concrete arises when the "result cannot be assured." The practice of the method step lead to the detection and reporting of anomalies is a system such that the result meets this requirement. It does not appear that the Examiner disputes that the result is indeed concrete and adequately enabled.

According to the USPTO's Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility, published 26 October 2005, the purpose of the requirement for a "useful, concrete, and tangible" result for subject matter to meet the requirements of 35 U.S.C. §101 is to "limit patent protection to invention that possess a certain level of 'real world' value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for further investigation or research." For the foregoing reasons, the invention has

a level of real world value, and is more than a mere idea or starting point for further research. The invention of the claims sets forth specific steps for the identification and reporting of anomalous events in live system operations, which has real world value. Moreover, the identification of the method steps leading to the identification and reporting of the anomalous event set forth more than an abstract concept or starting point for further research. Therefore, one of skill in the art could take the steps of the claims and practice the invention as disclosed.

The result is concrete and tangible, i.e., identifying and reporting system anomalies, and certainly the result is useful in the management of system operations. As such, the method claims produce a "useful, concrete, tangible result," the claims meet the standards under 35 U.S.C. §101.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

## **II. Formal Matters and Conclusion**

With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims.

In view of the foregoing, Applicants submit that claims 1-26, all the claims presently pending in the application, are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to

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discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 50-0510.

Respectfully submitted,

Dated: 12/12/06



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